

Marine Power Report

November 2004



M/V Jiimaan

Pelee Island in Lake Erie is Canada's most southerly populated land. Despite its quiet, sub tropical appearance it supports a thriving agricultural, tourist and viticulture based economy. Prosperity is very much linked to a reliable ferry service and Pelee Island Transportation, operated by the Owen Sound Transportation Company Ltd., an operational enterprise agency of the Province of Ontario on behalf of the Ministry of Transportation provides this. Two ships, the "M/V Pelee Islander" that has been plying the route from the mainland

since 1960 and "M/V Jiimaan", a larger Ropax vessel that entered service in 1992, serve the island.

When the port main engine in "M/V Jiimaan" suffered an unexpected catastrophic failure during the summer of 2002, the vessel managers reviewed all available options to return the ferry to service as quickly as possible and minimise inconvenience to its customers. When it became quite clear that replacing the original engine with an identical unit would put the vessel out of service for the balance of the season it was

decided to install a new Caterpillar MaK 6M20 engine available from stock. The 6M20 had similar dimensions and power output to the original engine and required minimal structural changes to the ship.

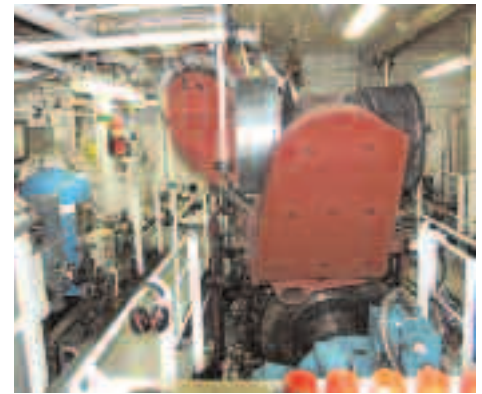
While Toromont Cat arranged for delivery of the new engine to the ship, Owen Sound Transportation contracted with Fraser Marine and Industrial of Port Colborne and Shelley Marine and Machine of Sarnia to do the installation. Toromont Cat engineers remained on board during the repower and, as a result of excellent teamwork, the project

moved ahead quickly. The work scope also included a detailed evaluation of the main engine exhaust system and this indicated that a new, higher capacity silencer was required. Nine weeks after the original engine failure “M/V Jiimaan” returned to service and completed the 2002 season.

The original starboard engine was also showing signs of distress and, after a detailed mechanical appraisal by the Chief Engineer, it was decided to install a second Caterpillar MaK 6M20 engine for the 2004 operating season. The work was awarded to Hike Metal Products Ltd., Wheatley, whose yard is a short distance from the port of



▲ MaK engine controls were easily integrated into the existing alarm and monitoring system. Woodward UG8 MAS governors with 4-20ma speed inputs and rack position sensors allowed an optimised combinator curve with the controllable pitch propellers.



▲ Looking forward over starboard 6M20 engine. Note the lube oil tank and standby pressure and scavenge pumps mounted low on the outboard side for optimum circulation. The flexible coupling between the engine and clutch reduction gear can be removed without disturbing alignment. The high capacity titanium plate heat exchanger is mounted on the forward bulkhead.



▲ Starboard and port Caterpillar MaK 6M20 propulsion engines each rated 1550bhp at 1000rpm provide “M/V Jiimaan” with 12kts at 85% CSR. Note ease of access to the cylinder heads and cylinder block. All fluid filter elements are cleanable to eliminate disposal costs.

at about 85% of CSR to provide the required 12kts service speed and their long stroke design and dry cylinder block concept has resulted in substantial improvements to both fuel and lubricating oil consumption. They are IMO Annex VI exhaust emission compliant.

“M/V Jiimaan” is also fitted with three Caterpillar 3406B, 290kw ship service generator sets and a Caterpillar 3304T emergency set all of which are original equipment. It has now joined the “M/V Pelee Islander” in being 100% Caterpillar powered.



▲ M/V Ulysses”, owned by Irish Ferries, is the world’s largest car ferry and is powered by four Caterpillar-MaK 6M43 engines totalling 24,000kw to provide a service speed of 25kts. This ship was voted “Europe’s most reliable ferry” having not lost a single trip since it was commissioned on the intensive Holyhead to Dublin service in 2001

Leamington where “M/V Jiimaan” is based. The scope of work also included a new exhaust silencer, piping upgrades and relocation of pumps for the port engine.

Toromont Cat worked closely with Hike and their electrical sub contractor, Don Johnson Electric and the ship’s Chief Engineer throughout the project and the final result is a very functional engine room and exceptional machinery reliability. The new Caterpillar MaK 6M20 engines operate

For more information call:

Brian Pyke
Owen Sound Transportation
519-376 -8740

www.cat-marine.com

Ken Westcar
Toromont Cat
905-641-5392

